

REMARKS

Applicant notes the filing of an Information Disclosure Statement herein on January 24, 2005 and note that no copy of the PTO/SB/08A was returned with the outstanding Office Action. Applicant respectfully requests that the information cited on the PTO/SB/08A (which is the same as that of record to that date in the parent application hereto) be made of record herein.

The Office Action mailed January 21, 2005, has been received and reviewed. Claims 1 through 3 are currently pending in the application. Claims 1 through 3 stand rejected. Applicant has amended claim 1, added new claims 4 and 5, and respectfully requests reconsideration of the application as amended herein.

Preliminary Amendment

Applicant's undersigned attorney notes the filing herein of a Preliminary Amendment on May 17, 2004, which filing was not acknowledged in the outstanding Office Action. Should the Preliminary Amendment have failed for some reason to have been entered in the Office file, Applicant's undersigned attorney will be happy to have a true copy thereof hand-delivered to the Examiner.

35 U.S.C. § 102(e) Anticipation Rejections

Anticipation Rejection Based on U.S. Patent No. 6,740,983 to Tay et al.

Claims 1 and 2 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Tay et al. (U.S. Patent No. 6,740,983). Applicant respectfully traverses this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

Applicant has amended independent claim 1 to include the limitation "...each bond pad within a group of bond pads being longitudinally separated from adjacent bond pads within the group of bond pads by an interpad spacing of less than about 0.5 mm, each group of bond pads

being separated from longitudinally adjacent groups of bond pads by an intergroup spacing of greater than about 0.5 mm.”

Applicant respectfully asserts that claim 1 as currently amended is not anticipated by Tay because Tay does not teach an interpad spacing of less than about 0.5 mm or an intergroup spacing of greater than about 0.5 mm. Tay describes a first chip package 68 shown in FIG. 8A and a second chip package 88 shown in FIG. 9A.

The first chip package 68 shown in FIG. 8A includes a semiconductor die 92 having an active surface 104 and bond pads 106 disposed thereon. The semiconductor die 92 is attached to the bottom side of a substrate 52 having an aperture 54 passing therethrough. The bond pads 106 of the semiconductor die 92 are exposed through the aperture 54 of the substrate 52. Column 10, lines 4-6; FIG. 8A-8B. The substrate 52 includes an individual chip circuitry portion 51 of a substrate tape 50, which is shown in FIG. 5. Column 9, lines 54-58.

Similarly, the second chip package 88 shown in FIG. 9A includes a semiconductor die 92 having an active surface 104 and bond pads 106 disposed thereon. The semiconductor die 92 is attached to the bottom side of a substrate 72 having an aperture passing therethrough. The bond pads 106 of the semiconductor die 92 are exposed through the aperture of the substrate 72. FIG. 9A-9B. The substrate 72 includes an individual chip circuitry portion 71 of a substrate tape 70, which is shown in FIG. 6.

Applicant respectfully asserts that a semiconductor die or chip is not shown in either FIG. 5 or FIG. 6 of Tay. Applicant concedes that FIG. 8A of Tay appears to show a semiconductor die having a plurality of bond pads 106 disposed adjacent a longitudinal centerline, wherein the plurality of bond pads are arranged in two longitudinal rows, each row comprising two longitudinally adjacent groups of bond pads. However, applicant asserts that Tay does not describe the spacing between the bond pads 106 or the spacing between adjacent longitudinal groups of bond pads. Tay does not describe “...each bond pad within a group of bond pads being longitudinally separated from adjacent bond pads within the group of bond pads by an interpad spacing of less than about 0.5 mm, each group of bond pads being separated from longitudinally adjacent groups of bond pads by an intergroup spacing of greater than about 0.5 mm,” as recited in claim 1. Therefore, applicant asserts that Tay does not describe each and

every element as set forth in claim 1 as currently amended, and requests that the Examiner withdraw the rejection and allow claim 1 to pass to issuance as currently amended.

Furthermore, applicant respectfully asserts that each of claims 2-5 is allowable at least since each depends from claim 1, which is allowable for the reasons set forth above. Therefore, Applicant also requests that the Examiner allow claims 2-5 to pass to issuance.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 6,303,948 to Kudou et al.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Kudou et al. (U.S. Patent No. 6,303,948). Applicant respectfully traverses this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

Applicant has amended independent claim 1 to include the limitation "...each bond pad within a group of bond pads being longitudinally separated from adjacent bond pads within the group of bond pads by an interpad spacing of less than about 0.5 mm, each group of bond pads being separated from longitudinally adjacent groups of bond pads by an intergroup spacing of greater than about 0.5 mm."

Applicant respectfully asserts that claim 3 is not obvious considering Kudou because Kudou does not teach or suggest all the claim limitations of claim 3. In particular, Kudou does not teach or suggest an interpad spacing of less than about 0.5 mm or an intergroup spacing of greater than about 0.5 mm as recited in claim 1, from which claim 3 depends.

Kudou describes a 16 Mbit semiconductor memory device that includes rows of pad groups. Column 7, line 66 – column 8, line 3. The rows of pad groups are labeled as 12-1a, 12-2a, 12-1b, and 12-2b in FIG. 9. Kudou does not teach or suggest, however, the longitudinal spacing between longitudinally adjacent bond pads within each row, or the longitudinal spacing between longitudinally adjacent rows. In particular, Kudou does not teach or suggest that each bond pad within a group of bond pads is longitudinally separated from adjacent bond pads within the group of bond pads by an interpad spacing of less than about 0.5 mm, and each group of bond pads is separated from longitudinally adjacent groups of bond pads by an intergroup spacing of greater than about 0.5 mm, as recited in claim 1. Therefore, Applicant respectfully asserts that Kudou does not teach or suggest all the claim limitations of dependent claim 3. Considering the invention recited in claim 3 as a whole, it would not have been obvious to one of ordinary skill in the art at the time the invention was made considering Kudow. Applicant therefore requests that the Examiner withdraw the rejection and allow claim 3 to pass to issuance.

New Claims 4 and 5

Regarding claim 4, Applicant respectfully asserts that none of the cited references describe, teach or suggest a semiconductor die as recited in claim 1 as currently amended, wherein the intergroup spacing is about 1.5 times the interpad spacing as recited in claim 4.

Regarding claim 5, Applicant respectfully asserts that none of the cited references describe, teach or suggest a semiconductor die as recited in claim 1 as currently amended, wherein the interpad spacing is about 0.4 mm and the intergroup spacing is about 0.6 mm as recited in claim 5.

Furthermore, none of the cited references discuss any relationship between an interpad spacing and an intergroup spacing. For these reasons, applicants respectfully assert that new claims 4 and 5 are patentable over the cited prior art references.

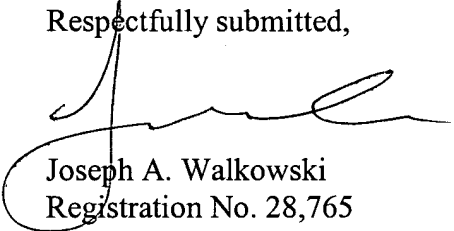
ENTRY OF AMENDMENTS

The amendment to claim 1 above should be entered by the Examiner because the amendment is supported by the as-filed specification at paragraph [0039] and by the drawings and does not add any new matter to the application. Support for new claims 4 and 5 is also found in the as-filed specification at paragraph [0039]. Further, the amendment and the new claims presented herein do not raise new issues or require a further search.

CONCLUSION

Claims 1-5 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicant's undersigned attorney.

Respectfully submitted,



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